



Frequently Asked Questions

WATER HYACINTH

What is water hyacinth?

Water hyacinth is an attractive floating aquatic plant with shiny green leaves and delicate lavender flowers. It was introduced into the Delta from South America more than 100 years ago, and it is currently considered a major non-native weed species in the world. Its rate of growth is among the highest of any known plant.

In California waterways, water hyacinth populations can double in size in as little as two weeks, which sends off short runner stems that create new plants. It can also reproduce by seeds, which can live in the mud of a waterway for up to 20 years.

Who is responsible for treating water hyacinth?

The California State Parks Division of Boating and Waterways (formerly, the Department of Boating and Waterways) has been the lead agency in controlling this weed since 1983 via the Water Hyacinth Control Program (WHCP). Every year, Boating and Waterways runs a control program of this weed through the use of herbicides, as permitted by federal and state entities. The control program usually runs from March through November, to not interfere with migrating fish.

How does the Aquatic Weed Control Program work?

DBW has the authority to cooperate with other state, local and federal agencies in controlling water hyacinth in the Delta region, its tributaries and the Suisun Marsh. Surveys are conducted in the Delta every year to determine where water hyacinth is located and which areas are in most need of treatment. Surveys are also conducted to determine what agricultural crops are growing near treatment sites.

How are treatment sites selected?

At the start of the treatment season, DBW prioritizes treatment sites based on results of pre-season field surveys, combined with the staff's experience and knowledge of Water Hyacinth growth patterns and distribution. Site prioritization considers whether or not the site is a nursery area, infestation levels, and whether the site is important for navigation,

public safety, recreation and/or commercial use, and water intakes or pumping facilities. Initial plans will indicate the general priority for site selection. During the treatment season, herbicide treatment plans can be modified due to surrounding crop surveys, weather conditions, growth and movement of Water Hyacinth, and environmental considerations (water quality, endangered species, etc). The site selection process also considers information and concerns received via email and phone from the public.

What approvals or permits are required?

The approval process determines if herbicide usage may affect any of the threatened, endangered or sensitive species, and critical habitats. Effects to humans, agricultural areas or potable water intakes are also reviewed. Approvals place restrictions on where DBW can treat the plants, when and where the program can start herbicide treatments (this varies throughout the Delta region), and an extensive water monitoring program. Extensive water quality sampling is conducted at treatments sites throughout the season to ensure herbicide levels stay within the allowed limits.

DBW works with the US Department of Agriculture to obtain the required approvals for conducting the Water Hyacinth Control Program from the United States Fish and Wildlife Service and the National Marine Fisheries Service (part of National Oceanic and Atmospheric Administration). These two approvals are required by the Endangered Species Act.

A third approval, a National Pollutant Discharge Elimination System (NPDES) permit is required by the Central Valley Regional Water Quality Control Board.

The WHCP has obtained all required permits without a need for a renewal until 2017. The NPDES Permit was obtained in 2013. The United States Fish and Wildlife Service (USFWS) Biological Opinion (BO) was obtained March 13, 2013 and the National Marine Fisheries Service (NMFS) Concurrence Letter was received on February 27, 2013. The USFWS BO and NMFS Letter are 5-year permits from 2013-2017. DBW is permitted to conduct herbicide treatment for Water Hyacinth from early Spring to mid-Fall.

Where does the funding come from?

Funding for water hyacinth treatment comes from the Harbors and Watercraft Revolving Fund, which receives revenues from boaters' registration fees and gas taxes.

What does DBW do to control the weed?

DBW's area of responsibility to treat the water hyacinth is approximately 67,700 water surface acres in the Delta and its tributaries:

- West up to and including Sherman Island at the confluence of the San Joaquin and Sacramento rivers.
- North to the confluence of the Sacramento River and the Sacramento Deep Water Channel, plus Lake Natoma.
- South along the San Joaquin to Mendota.

- All the tributaries to the San Joaquin, Tuolumne, Merced and Stanislaus rivers.

The Division has 11 personnel to treat affected areas within its area of responsibility. This breaks down to five, two man crews.

For the months between March and November, water hyacinth is chemically treated with glyphosate or 2,4-D. Herbicides are registered for aquatic use with California Environmental Protection Agency and the California Department of Pesticide Regulation. The herbicides are systemic herbicides in liquid form, sprayed directly onto the water hyacinth.

Initial symptoms of glyphosate treatment on water hyacinth do not appear for two weeks or more, although symptoms for 2,4-D appear sooner than the Glyphosate symptoms. Visible treatment symptoms are gradual wilting and yellowing of the plant, advancing to browning of vegetation and eventual decay. It may take two months for herbicide effectiveness to be clearly visible.

Are there any alternative methods to remove the weed, other than the herbicides?

The use of herbicides is one of the methods used to control water hyacinth. The plant can also be removed manually through a method called herding. Herding is when boats are used to push hyacinth towards a boat ramp or a conveyor belt. Plants are then taken to proper disposal sites. Another method is mechanical harvesting.

What has been done this year (2014)?

California State Parks Division of Boating and Waterways conducted herbicide treatments to control water hyacinth in the Sacramento-San Joaquin Delta Region from March through November 2014. Treatment is based on infestation levels and public calls.

As of November 26, 2014, the WHCP completed 561 herbicide treatments in 149 sites that cover the Delta, San Joaquin River and Tuolumne River. Approximately 2,500 acres of water hyacinth were treated with glyphosate and 2, 4-D. Continuous monitoring is conducted to ensure navigability of waterways. Herbicide treatment of Water Hyacinth conclude on November 30, 2014 for the season.

In the Stockton area, DBW treated a total of 14 times, covering approximately 93 acres of water hyacinth. Sites included:

- Stockton Marina and waterfront (includes Mormon Slough), Port of Stockton (west from I-5 bridge to the junction of the San Joaquin River), Smith Canal, Calaveras River, and a section of the Deep Water Channel, as well as Stockton Deep Water Channel, Buckley Cove (River Point Landing, Ladd's Marina), Stockton Sailing Club, Windmill Cove.

Why is the hyacinth so bad this year?

This extremely prolific aquatic invasive plant can double in size every ten days in hot weather and can quickly become a dense floating mat of vegetation up to six feet thick. The mats can travel with river currents and with tidal movement.

The plant grows exponentially during the summer heat and an area that has little or no hyacinth one week can have very significant infestation by the next week.

During the fall season, plants are breaking free from their hold in the emergent vegetation and floating with currents, tidal movements and aided by the prevailing winds.

Each Delta region infested by water hyacinth has different characteristics. Therefore, it is important for DBW to survey locations in order to properly treat areas.

Sites with dead ends tend to hold water hyacinth in the area longer due to one or more of the following reasons:

- No river flow except tidal movements.
- West southwest winds, which prevail during spring, summer and fall seasons.
- Being close to big nursery areas.

Why is the Stockton waterfront so severely impacted?

Unfortunately, the dead end nature of the waterfront tends to hold the plant in the area longer due to no river flow except tidal movements. This time of the year the plants are breaking free from their hold in the emergent vegetation and floating with currents, tidal movements and aided by the prevailing winds. Winds prevail during the spring, summer and fall predominantly from the west southwest. Another factor is that Mormon Slough, just to the west of the Stockton Waterfront, is a big nursery area.

Is DBW going to conduct any hand removal, herding, or mechanical harvesting during the off season?

DBW began mechanical harvesting of Water Hyacinth in parts of the Delta on December 5, 2014. A contract was finalized with Clean Lakes, Inc. of Martinez, and harvesting will take place in areas most impacted by the hyacinth. The focus of the mechanical harvesting will begin with a section of the Stockton Deep Water Channel from Weber Point to Buckley Cove. Other adjacent areas where water hyacinth has travelled and is impairing navigation will also be harvested.

Water hyacinth is an aquatic weed that is reactive to changing weather conditions. While it thrives in warm and dry weather, it can move and travel within waterways in rainy and windy conditions, and die off in hard freezes. Rain and wind can impact treatment, so harvesting will be conducted in infested areas if weather conditions are favorable.

Why can't we get rid of water hyacinth?

There is no known eradication method known in the world for water hyacinth in moving water. The species is too well established in the Delta region, eradication is impossible. Therefore, DBW operates a control program as opposed to an eradication program.

How can people report water hyacinth?

If you sight water hyacinth, please call the Division of Boating and Waterways (DBW) at (888) 326-2822 or send an e-mail to ais@parks.ca.gov. Include in your message the address or nearest landmark of the sighting. If possible, take photographs of the plant.

For more information, visit www.dbw.parks.ca.gov.